

Notice of Allowability

Application No.

10/799,872

Examiner

Jason Crawford

Applicant(s)

LEE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/21/2006.
2. ☒ The allowed claim(s) is/are 1,2, 4-18 and 20-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Miscellaneous

The Applicant previously cancelled claim 3, therefore only claims 1, 2 and 4-27 remain for this Office Action.

Drawings

The drawings were received on 9/21/2006. The Examiner accepts these drawings.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Rose on 11/13/2006.

Please cancel claim 19 and Amend Claims 1, 18 and 27 as described below:

Claim 1 should state the following:

-- "A carry chain in a logic array block having a set of logic elements, the carry chain comprising:

a first path connecting a first series of logic elements in the logic array block, wherein the logic elements in the first series are a subset of the set of logic elements in the logic array block;

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a second path connecting a second series of logic elements in the logic array block,

wherein one or more of the logic elements in the second series are not in the first series; and

a multiplexer having an output, a first input, and a second input, wherein when the first input is selected, a carry signal is propagated through the first series of logic elements and through the output of the multiplexer; and

wherein when the second input is selected, the carry signal is propagated through the second series of logic elements and through the output of the multiplexer.”

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Claim 18 should state the following:

-- “A programmable logic device comprising:

an array of logic elements grouped into a plurality of logic array blocks; and

a carry chain circuit disposed within a logic array block, the carry circuit configured to operate in a first mode and a second mode,

wherein when the carry circuit operates in the first mode, a carry signal is propagated through a first series of logic elements within the logic array block,

wherein when the carry circuit operates in the second mode, a carry signal is propagated through a second series of logic elements within the logic array block,

the first series of logic elements being a subset of the second series of logic elements; and

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a multiplexer having a first input and a second input,
wherein when the first input is selected, the carry signal is propagated through the multiplexer and the first series of logic elements, and
wherein when the second input is selected, the carry signal is propagated through the multiplexer and the second series of logic elements.”

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Claim 27 should state the following:

-- “A method of forming a carry chain in a logic array block having a set of logic elements, the method comprising:

forming a first path connecting a first series of logic elements in the logic array block,

wherein the logic elements in the first series are a subset of the set of logic elements in the logic array block;

forming a second path connecting a second series of logic elements in the same logic array block,

wherein one or more of the logic elements in the second series are not in the first series; and

a select circuit having a first input, a second input and an output,

wherein when the first input is selected by the select circuit, a carry chain signal is propagated through the output of the select circuit to the first series of logic elements; and

wherein when the second input is selected by the select circuit, the carry chain signal is propagated through the output of the select circuit to the second series of logic elements."

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Allowable Subject Matter

Claims 1, 2, 4-18 and 20-27 are allowed. The following is an examiner's statement of reasons for allowance:

In regards to claim 1, the prior art discloses of a carry chain of logic elements having first and second paths and a multiplexer, however, the prior art does not directly disclose of when selecting the first input of the multiplexer, the carry signal is propagated through the first path and through the multiplexer output and when the second input is selected, the carry signal is propagated through the second path and the multiplexer output, nor would it have been obvious to one of ordinary skill in the art to do so. Claims 2 and 4-17 are also allowed as being dependent on claim 1.

In regards to claim 18, the prior art discloses of a programmable logic device comprising an array of logic blocks, a carry circuit and a multiplexer, however, the prior art does not directly disclose of the first series of logic elements being a subset of the second series of logic elements, nor that the multiplexer inputs are selected such the when the first one is selected that the carry signal propagates through the multiplexer and the first series of elements and when the second input of the multiplexer is selected that the carry signal is propagated through the multiplexer and the second series of

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logic elements, nor would it have been obvious to one of ordinary skill in the art to do so. Claims 20-26 are also allowed as being dependent on claim 18.

In regards to claim 27, the prior art discloses of a method of forming a carry chain in a logic array block comprising first and second paths of logic elements and a select circuit, however, the prior art does not directly disclose of when selecting the first input of the select circuit, the carry signal is propagated through the first path and through the select circuit output and when the second input is selected, the carry signal is propagated through the second path and the select circuit output, nor would it have been obvious to one of ordinary skill in the art to do so.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Crawford whose telephone number is 571-272-6004. The examiner can normally be reached on Monday - Friday 7am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rex Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMC


REXFORD BARNIE
SUPERVISORY PATENT EXAMINER
11/21/06